UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,005	09/26/2003	Howard Marshall Monroe	108529.0007.001	7717

7590 03/31/2006

Michael D Stein
WOODCOCK WASHBURN LLP
46th Floor
One Liberty Place
Philadelphia, PA 19103

EXAMINER	
ASSOUAD, PATRICK J	
ART UNIT	**PAPER NUMBER**
2857	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/672,005	MONROE ET AL.
	Examiner	Art Unit
	Patrick J. Assouad	2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-28 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-28 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 26 September 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Helsper et al. (US 6,876,988 B2) patented 4/5/05 with effective priority to 10/23/2000.

3. Helsper et al. disclose an enhanced computer performance forecasting system. Note that Figs. 1-3a and 10 of Helsper et al. are reproduced below for ease in understanding this rejection.

4. The correspondence between Helsper et al. and the instant claimed invention (independent claims 1,13 and 18) is as follows: " collecting performance data relating to an electronic device" or to "a plurality of electronic devices" and "storing said performance data on a storage device" and "analyzing the performance data for the purpose of generating a plurality of forecasts designed to predict future performance of the electronic device" and the "processing unit" for doing so is the monitoring agents 210,212,214, etc., gathering performance data of an electronic commerce or e-business computer

system 150 or any other related electronic component 159,158,156,154,160, etc., and those agents then pass the performance data to a performance forecasting engine 115 where it is stored and analyzed and used to predict or forecast future performance indicators as well as "underlying indicators" (see col. 14); the "selecting a single forecast from said plurality" is the selection of any one particular performance factor out of many (e.g. response time, tcp connects, cpu utilization, etc., over different time intervals) for further detailed analysis, display, alarm triggering, tolerance adjusting, etc.

5. Note especially the following passages from (cols. 17-18) of Helsper et al.:

> Step 1016 is followed by step 1018, in which the forecasted performance ("Predicted") and tolerance bands are determined for the computer system of the e-business system 150 for a plurality of near-term forecasted intervals. The forecasted performance ("Predicted") and tolerance bands are compared with the "Baselines" with tolerance bands of the e-business system 150 and the "Actual" performance of the e-business system 150. The forecasted ("Predicted") performance with tolerance bands, the "Baseline" with tolerance bands and the "Actual" performance are adapted to be displayed as described above in relation to FIGS. 4, 8A and 8B. In the preferred embodiment, the forecasted performance may be for the "blind spot" between -1-+24 hours. Moreover, the dashboard 335 would identify alarms within the "blind spot" of FIG. 11.
>
> Step 1018 is followed by step 1020, in which at least one alarm condition may be determined. An alarm condition is based on forecasted ("Predicted") performance of one or more of the data sources 151, 152 or subsystems which will have an impending status outside of prescribed or normal operating conditions. The alarm condition is typically displayed on the dashboard 335 by the red illumination of one of the plurality of status light indicators 337. The at least one alarm condition is displayed on the dashboard 335 and indicated graphically via the reporting user interface 130.
>
> In determining an alarm condition, the forecasting routine 1000 may also consider user specified criteria entered into the reporting user interface 130. For example, the reporting user interface 130 may include a selection under the "Tools" pull down menu that allows a user to set custom alarms. When setting custom alarms, the user may specify the type of action that would trigger an alarm. For example, a user may indicate that an alarm should be sent when the error detection and correction module 117 imputes estimated values for erroneous or missing input values. When this user-specified criterion is satisfied, the forecasting routine 1000 determines an alarm condition as described above.
>
> In addition to imputation, the forecasting routine 100 may consider other types of user specified alarm criteria. For example, a user could

specify system performance thresholds. If the system performance exceeds these thresholds, the forecast routine 1000 could issue a "QoS" alarm as previously described with reference to FIG. 8A. A user can specify values of the learned parameters that should result in the generation of an alarm. Hence, the forecasting routine 1000 can determine an alarm in step 1020 for any of the above-stated user-specified criteria. Thus, the forecasting routine 1000 allows variable programmable alarming in that a customer can alarm most system related issues.

Step 1020 is followed by step 1022, in which the system 110 performs one or more response actions, such as reallocating communication trunk capacity to meet a projected shortfall, reallocating server or memory capacity to a particular application, ending or postponing non-critical tasks, discontinue service to interruptable customers, or other corrective actions. Like step 1020, the forecasting routine may also consider user specified response actions in step 1022 entered using the reporting user interface 130. For example, the forecasting routine 1000 may log the day and time each time it issued an alarm for imputing input values in step 1022. By periodically reviewing this log, a user may assess the reliability of the data used in forecasting.

While the flowchart of FIG. 10 illustrates the steps for forecasting the performance of the e-business system 150, the flowchart of FIG. 10 can also be used to forecast the performance of an individual data source or subsystem thereof, such as shown in FIG. 4A.

The near-term forecasting of the present invention makes it possible to allow an e-business system 150 to lease part of their infrastructure based on low usage times. In the preferred embodiment, the near-term forecasting of the present invention may identify or predict low usage time so the advertisement scheduling may be optimized for maximizing revenue. In view of the foregoing, it will be appreciated that the accurate computer system near-term performance forecast computed by the present invention provides many advantages over prior monitoring agents and other network management tools. It should be understood that the foregoing relates only to the exemplary embodiments of the present invention, and that numerous changes may be made to these embodiments without departing from the spirit and scope of the invention as defined by the following claims.

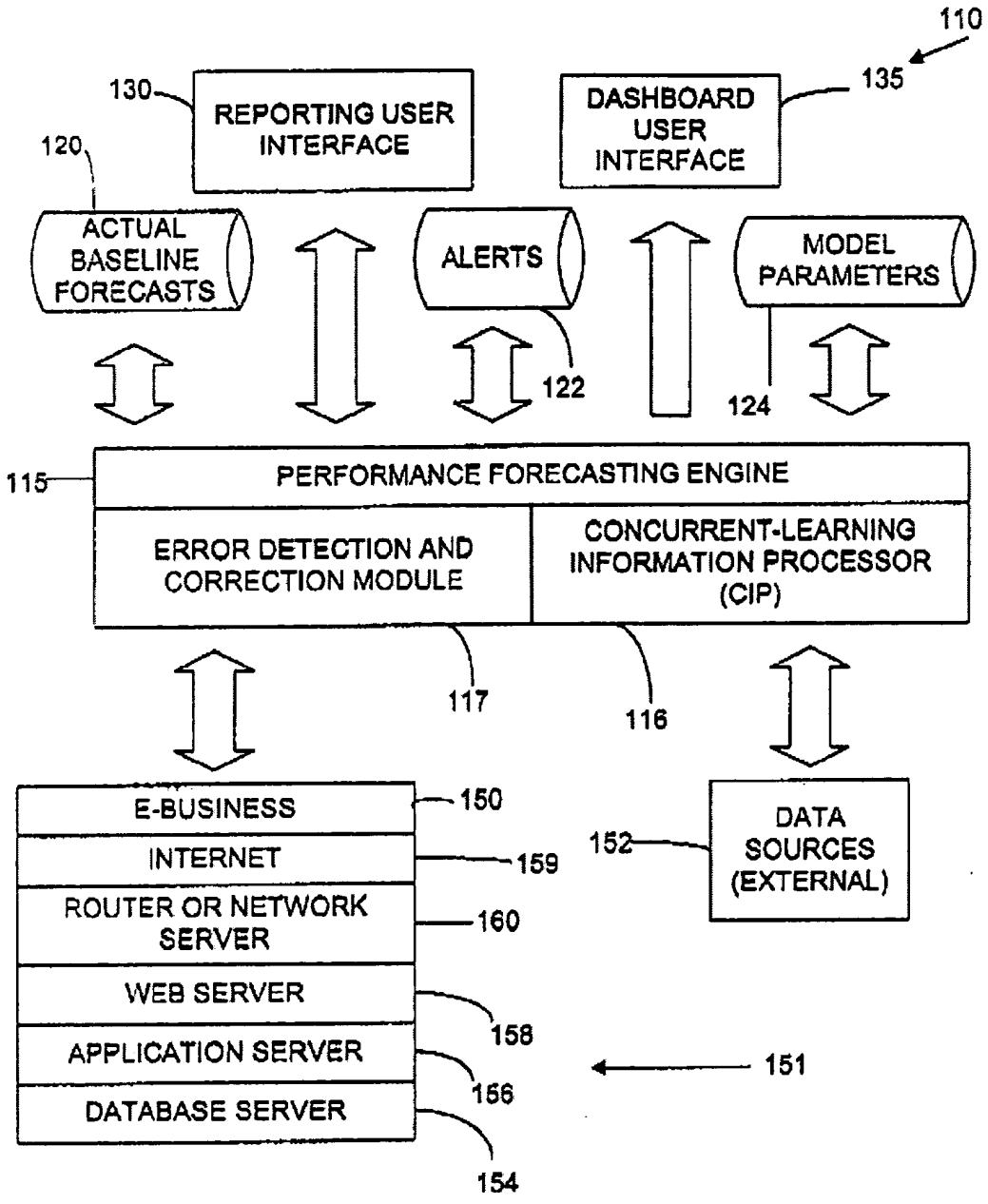
110
130
REPORTING USER INTERFACE
135
DASHBOARD USER INTERFACE
120
ACTUAL BASELINE FORECASTS
ALERTS
MODEL PARAMETERS
122
124
115
PERFORMANCE FORECASTING ENGINE
ERROR DETECTION AND CORRECTION MODULE
CONCURRENT-LEARNING INFORMATION PROCESSOR (CIP)
117
116
E-BUSINESS
150
INTERNET
159
ROUTER OR NETWORK SERVER
160
WEB SERVER
158
APPLICATION SERVER
156
DATABASE SERVER
154
152
DATA SOURCES (EXTERNAL)
151

FIG. 1

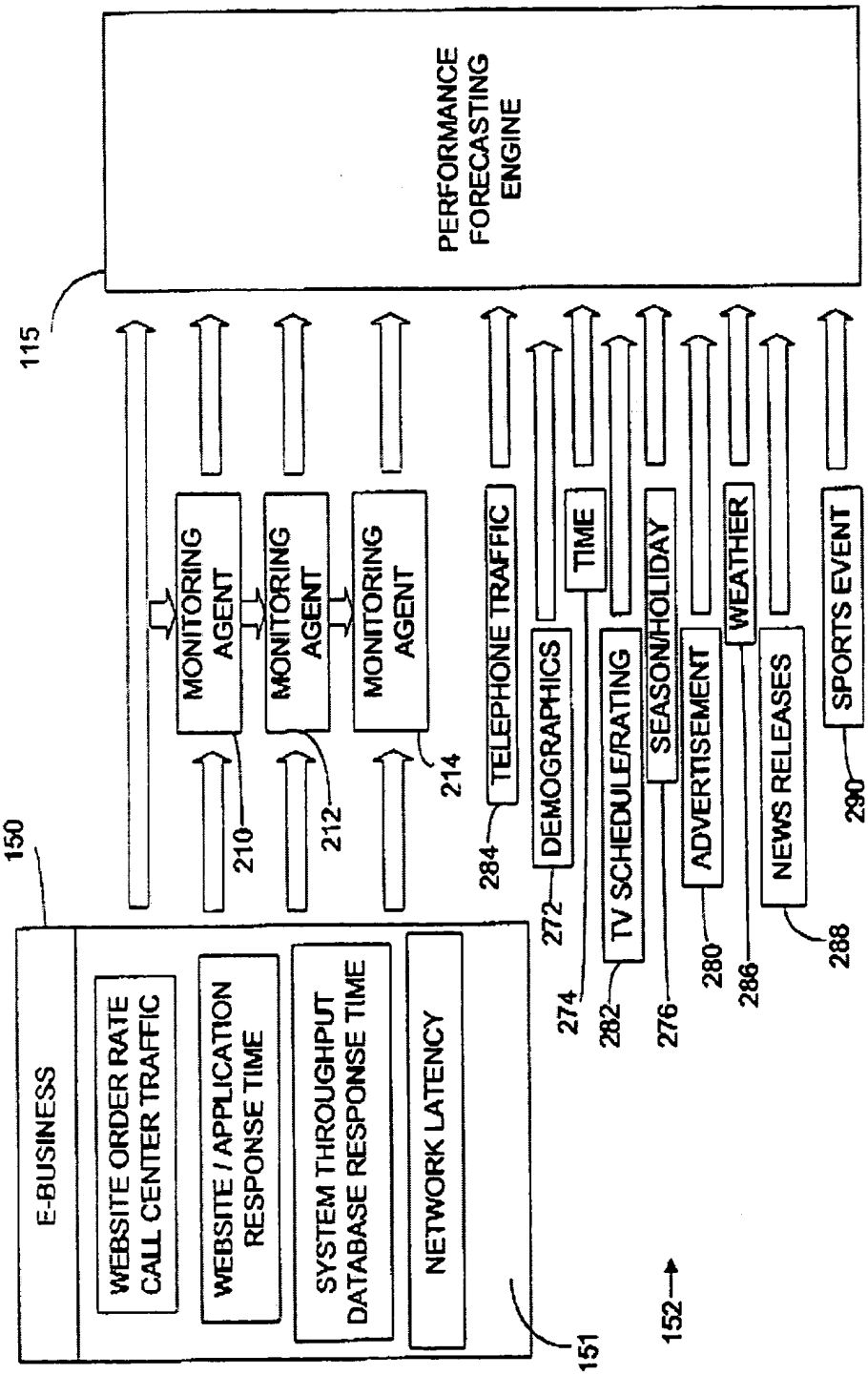
PERFORMANCE FORECASTING ENGINE
115
MONITORING AGENT
MONITORING AGENT
MONITORING AGENT
210
212
214
150
E-BUSINESS
WEBSITE ORDER RATE
CALL CENTER TRAFFIC
WEBSITE / APPLICATION RESPONSE TIME
SYSTEM THROUGHPUT DATABASE RESPONSE TIME
NETWORK LATENCY
151
152
TELEPHONE TRAFFIC
DEMOGRAPHICS
TIME
TV SCHEDULE/RATING
SEASON/HOLIDAY
ADVERTISEMENT
WEATHER
NEWS RELEASES
SPORTS EVENT
284
272
274
282
276
280
286
288
290

FIG. 2

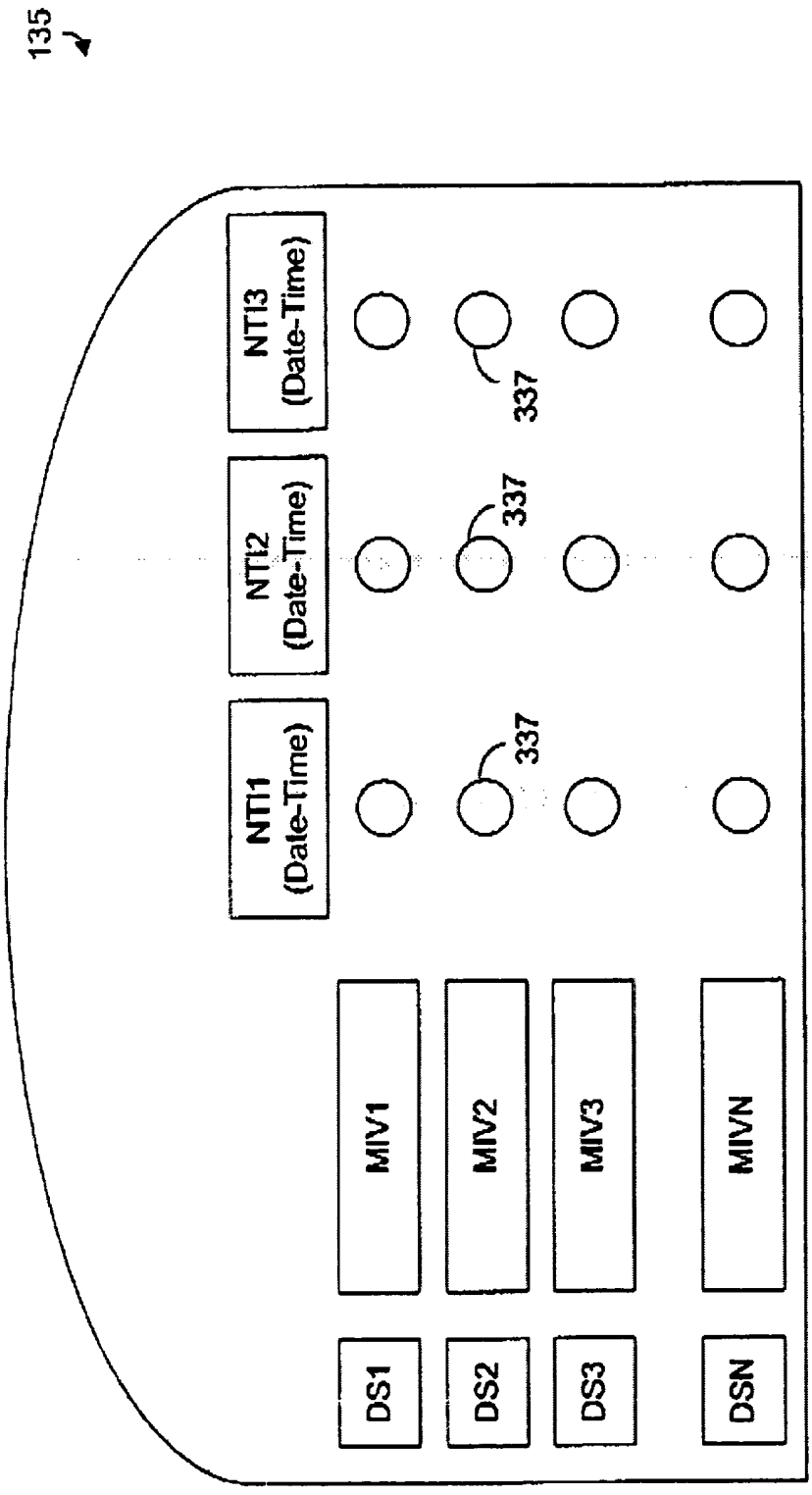
135
NTI1 (Date-Time)
NTI2 (Date-Time)
NTI3 (Date-Time)
337
337
337
MIV1
MIV2
MIV3
MIVN
DS1
DS2
DS3
DSN

FIG. 3A

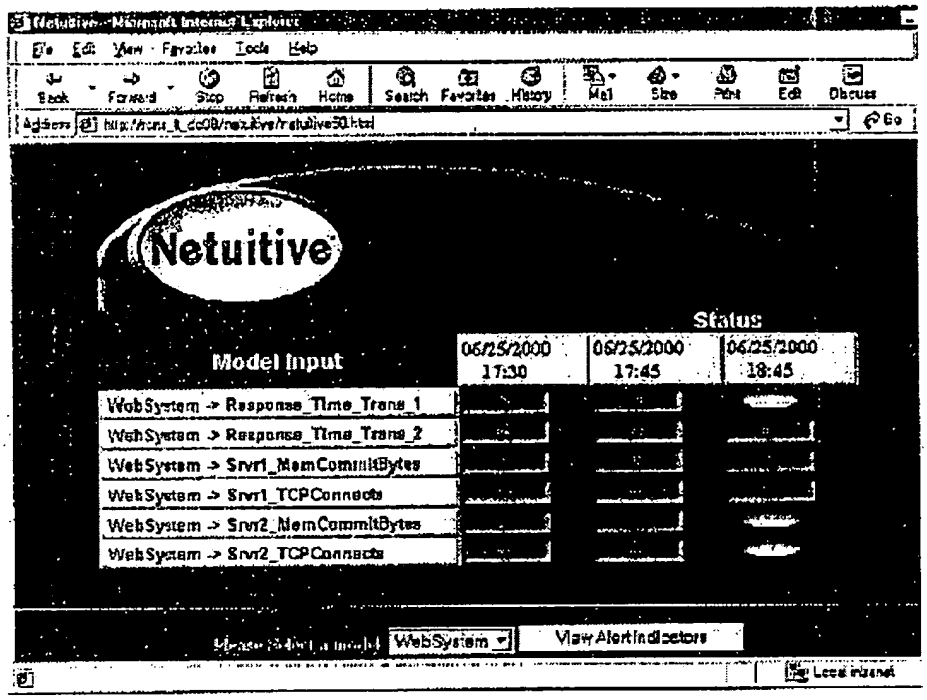
Netuitive
Status
Model Input
06/25/2000 17:30
06/25/2000 17:45
06/25/2000 18:45
WebSystem -> Response_Time_Trans_1
WebSystem -> Response_Time_Trans_2
WebSystem -> Srvr1_MemCommitBytes
WebSystem -> Srvr1_TCPConnects
WebSystem -> Srvr2_MemCommitBytes
WebSystem -> Srvr2_TCPConnects
WebSystem
View Alert Indicators

Fig. 18

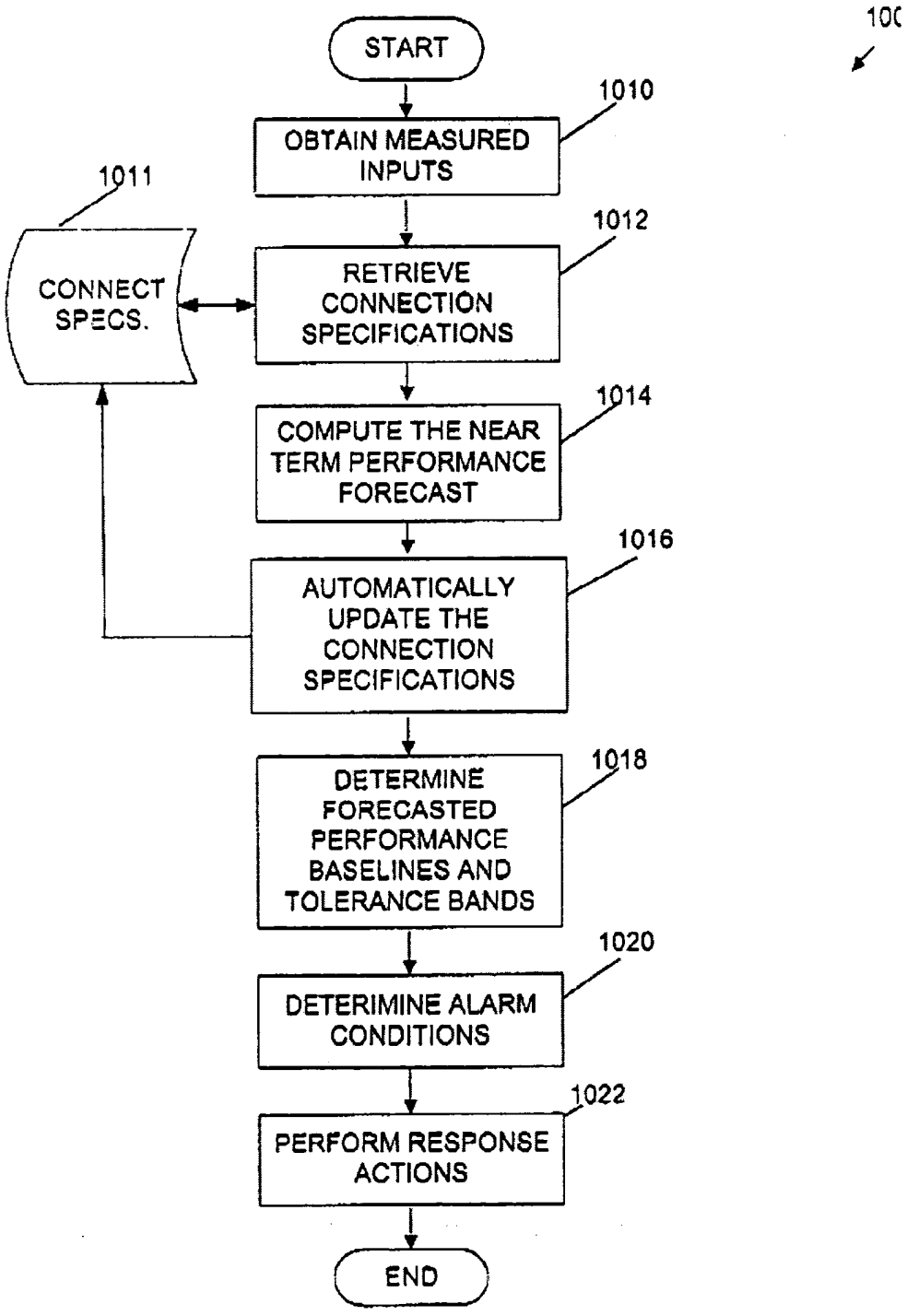
100
START
1010
OBTAIN MEASURED INPUTS
1011
CONNECT SPECS.
1012
RETRIEVE CONNECTION SPECIFICATIONS
1014
COMPUTE THE NEAR TERM PERFORMANCE FORECAST
1016
AUTOMATICALLY UPDATE THE CONNECTION SPECIFICATIONS
1018
DETERMINE FORECASTED PERFORMANCE BASELINES AND TOLERANCE BANDS
1020
DETERIMINE ALARM CONDITIONS
1022
PERFORM RESPONSE ACTIONS
END

FIG. 10

6. As per dependent claims 2 and 19 which relate to a "performance threshold," see the above passages with respect to the user specified criteria entered into the reporting user interface 130 and the custom alarm setting and variable programmable alarming of Helsper et al.

7. As per dependent claims 3 and 20 which relate to a "graphical display", see at least Figs. 4a-4b and 7-9b of Helsper et al.

8. As per dependent claims 4 and 21 which relate to "capacity utilization data", see at least control window 425 which may include key performance indicators labeled "cpu utilization," "DB throughput," and "available memory." See col. 13, lines 38-40 of Helsper et al.

9. As per dependent claims 5-7 and 22-24 which relate to "statistical analysis" and "adjusting threshold values" and "subjecting the electronic device to additional analysis utilizing the adjusting threshold,", see at least the discussion of "learning" by a "neural network" and "regression analysis" of the Summary of the Invention (col 2, lines 35-55), and the discussion of the connection weights (of the neural network) defining elements of an inverse covariance matrix using for the system learned parameters of col. 4, lines 47-55 of Helsper et al. Also see the discussion in col. 11 regarding "extrinsic variables 152" to be factored into the regression analysis which allows an e-business to "theorize about certain causative or predictive factors...and then build these factors into its forecasting system..."

10. As per dependent claims 8-12 and 25-28, see at least the aforementioned Figures and passages, most notably Fig. 3b reproduced above and the discussion of user-specified baselines and thresholds for alarms.

11. As per dependent claim 14 which relates to "distributing the overall workload across each of said devices" see at least dependent claim 3 of Helsper et al. which refers to "reallocating processing resources, changing system configuration settings..." as "response actions if the performance forecast for the computer system falls outside the tolerance band."

12. As per dependent claims 15-17 which relate to "collecting anticipated workload fluctuation data", "sorting forecasts by date," and "generating a report...providing a best or worst case estimate", see at least the aforementioned passages and Figures, most notably the discussion user-specified baselines and thresholds for alarms and Fig. 3b (reproduced abvove).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Most notable are Adriaans et al. ('175 B1), Waclawski ('587 B2) and Waclawski ('575 B1).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Assouad whose telephone number is 571-272-2210. The examiner can normally be reached on Tuesday-Friday, 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J Assouad
Primary Examiner
Art Unit 2857

pja